

SWG-2014-00848

## Review of Response to Comments

March 18, 2015

- EPA Comment: *We recommend the applicant conduct an alternatives analysis to determine the least damaging practicable alternative, as per the 404(b) (1) Guidelines.*

### Applicant Response:

#### a. Off-site Alternatives

The objective of the CLT project is to develop a crude condensate storage and marine terminal, which narrows the site search to deep draft navigation channels with direct maritime access. The primary driving force associated with siting of the CLT project is the abundance and type of product being developed in the Eagle Ford Shale thereby necessitating proximity of the selected site to the Eagle Ford region, particularly along the Texas Gulf Coast. Corpus Christi was selected due to proximity to this region and meeting the waterway criteria. Within the Port of Corpus Christi, CLT assessed respective sites in the Corpus Christi Inner Harbor and along the La Quinta Ship Channel, which are the two deep draft navigation channels in the Port of Corpus Christi. Due to recent trends of severe channel congestion and traffic restrictions for vessels in and out of the Corpus Christi Inner Harbor, all sites within the Inner Harbor were rejected. These same impediments do not exist on the La Quinta Ship Channel. Only one site of adequate size for the project is available on the La Quinta Ship Channel (the selected location). Because only one site is available. There are no other off-site alternatives.

#### b. On-site Alternatives

The minimum development needed to accomplish project goals and objectives must accommodate a combination of two types of marine vessels: Aframax (820 feet length overall (LOA) and a beam width of 144 feet) and a Jones Act Tanker (600 feet LOA and a beam width of 106 feet). There are only two ways to accommodate these types of vessels at the site: (1) a perpendicular or diagonal berth or (2) a parallel berth. Maneuvering a vessel out of a perpendicular or diagonal berth would require dredging of a turning basin in front of the CLT facility. This turning basin would encroach on significant seagrass beds located on the west side of the La Quinta Ship Channel and Federal DMPA 13 and could also impede the normal flow of vessel traffic (since the turning basin would be located within the middle of La Quinta Channel). Additionally, a perpendicular or diagonal berth, and requisite turning basin, would require significantly more dredging than a parallel berth, thereby making the project financially unfeasible.

In summary, the diagonal or perpendicular berth options were rejected for environmental and financial reasons. The parallel berth alignment, while impacting the entire narrow fringe of habitat on site, limits impacts to intertidal habitat that is already severely at risk from erosion due to proximity with the Federal waterway. The parallel berth alignment also minimizes the dredging requirement, thus making the project financially feasible.

**EPA Response:** We thank the applicant for providing an alternatives analysis. While it is brief, it does include consideration of environmental impacts, unlike some alternatives analyses we have received. However, the description of the specific environmental tradeoffs among the various alternatives is somewhat unclear. We think the applicant is saying that the diagonal or perpendicular berth options would impact more seagrass than the parallel berth, but the diagonal or perpendicular berth options would impact less emergent wetland. Is that the correct interpretation? We request the applicant clarify this. In addition, it would be desirable report estimates of the acreages of these habitats that would be impacted by each of these alternatives. Finally, if the applicant does not select the least environmentally damaging alternative, they should explain why the least environmentally damaging alternative is not “practicable”.

- EPA Comment: *Dredging can have indirect negative effects on seagrasses through increased turbidity and light attenuation in the water column, and by burial due to sedimentation. The Laguna Madre ICT recommended to the USACE in the past, based on scientific studies funded by the USACE, that dredging be limited to the seagrass dormant period, November-February. We recommend the COE include a requirement in the permit that the applicant be restricted to dredging, and discharge from the DMPA, during the seagrass dormant period, November-February.*

Applicant Response: The applicant will endeavor to conduct dredging and discharge from the DMPA during the seagrass dormant period.

**EPA Response:** We appreciate the applicant’s offer to endeavor to conduct dredging and discharge from the DMPA during the seagrass dormant period. However, EPA continues to recommend that the COE include a requirement in the permit that the applicant be restricted to dredging and discharge from the DMPA during the seagrass dormant period, November-February.

- *EPA Comment: In addition, we recommend the applicant demonstrate, prior to permit issuance, discharges from the DMPA will not result in water quality criteria not being met, including general criteria, such as those dealing with total suspended solids and the maintenance of aquatic vegetation. Additionally, we recommend the applicant demonstrate that the proposed discharge from the DMPA will not compromise the Seagrass Propagation designated use, under the Texas water quality standards. Seagrasses potentially at risk due to increased turbidity and light attenuation, due to the effects of the effluent discharge from the DMPA, could include beds within 1 mile of the discharge. This estimate is based on similar statements made by the Laguna Madre ICT, regarding the potential effects of dredged material discharges on seagrasses.*

Applicant Response: The applicant agrees to maintain Total Suspended Solids (TSS) in return water from the DMPA below the Rail Road Commission (RRC) of Texas' water quality threshold of 300 mg/l (which is in accordance with State water quality standards of 300 mg/l). Discharge from the DMPA, if kept below the water quality threshold of 300 mg/l, will not compromise the Seagrass Propagation designated use under the Texas water quality standards.

**EPA Response:** We request the applicant explain their conclusion that if the TSS concentration in the discharge from the DMPA is kept below 300 mg/l, the discharge will not compromise the Seagrass Propagation designated use under the Texas water quality standards. While a determination regarding whether or not the discharge will result in the water quality criteria being met is important, the determination of whether or not the discharge might negatively affect seagrasses can be a separate matter, albeit one with significantly different regulatory implications. A TSS concentration of 300 mg/l may meet the water quality standards, and yet, might not protect seagrasses. To our knowledge, nobody has determined how a 300 mg/L TSS concentration in the volume of effluent that will result from the proposed dredged material discharge into the DMPA the dredged material is proposed to be discharged into, at the specific discharge locations for that DMPA, may affect light attenuation on nearby seagrass beds, and thus seagrass health and productivity. We continue to be concerned that such discharge may negatively impact seagrass health and productivity.

- EPA Comment: *We recommend the permit include requirements for the applicant to employ all best management practices typically required of dredging and construction projects in the immediate vicinity of seagrasses, to minimize increases in light attenuation on seagrass beds due to increased total suspended solids.*

Applicant Response: If dredging and discharge is conducted outside of the seagrass dormant period, the applicant will employ Best Management Practices (BMPs) typically used for dredging and construction in the vicinity of seagrass beds. BMPs may include weighted silt screens and turbidity curtains.

**EPA Response:** We appreciate the applicant's offer to employ BMPs if dredging and discharge is conducted outside of the seagrass dormant period. However, we continue to recommend that the COE include a requirement in the permit that the applicant be restricted to dredging and discharge from the DMPA during the seagrass dormant period, November-February. We also continue to recommend that the permit include requirements for the applicant to employ all best management practices typically required of dredging and construction projects in the immediate vicinity of seagrasses, with no consideration given to whether the dredging is conducted outside of the seagrass dormant period, or not.

- EPA Comment: *We recommend the applicant consider beneficial use of the dredged material for habitat restoration/creation, rather than disposal in dredged material placement areas (DMPAs), assuming the dredged material is suitable material, free from toxic pollutants.*

Applicant Response: The beneficial use of dredged material cannot be achieved within the required project schedule and is not financially feasible. There are currently no shovel-ready projects within the Corpus Christi Bay Watershed that would require the use of beneficial material. The cost of excavation and storage of material for future placement within a beneficial use site would be cost prohibitive to the applicant and therefore is not a financially feasible option.

**EPA Response:** While we are surprised that there are apparently no viable options for beneficial use of this dredged material, beneficial use of dredged material is voluntary. We appreciate the applicant's consideration.

- *EPA Comment: Based on our review of the available data, there don't seem to be any strong suggestions of contaminant problems in the vicinity of the proposed project. However, we still recommend testing of proposed dredged material prior to permit issuance.*

*EPA Comment: We recommend the applicant provide recent data describing the quality of the material proposed to be dredged and disposed. Existing information is acceptable, assuming it is less than five years old, a broad suite of contaminants was measured, and appropriate sample collection and laboratory analytical methods were used, including appropriate detection limits.*

**Applicant Response:** The applicant will conduct an analysis of sediments to be dredged at the marine terminal site (project site) and a soil assessment at the proposed 13-acre mitigation site on Kinney Bayou near the La Quinta Ship Channel. Sediment samples will be taken at six separate locations at the project site and mitigation site for a total of 12 sub-surface samples. Sub-surface samples will be conducted to a depth of -20 feet MLT and will be evaluated for USACE list of common Chemicals of Concern (COGs), plant nutrients, boron, lime, organic matter, and salinity. Information obtained from the sediment testing will assist in identifying any COCs present at both the project and mitigation sites and also assist in making recommendations concerning soil preparation and soil management for planting of seagrass and smooth cordgrass at the proposed mitigation site.

**EPA Response:** We appreciate the applicant's willingness to test the sediments and soils at the project site. We recommend the applicant use the Upland Testing Manual to guide sampling and analysis of the proposed dredged material. More specifically, we recommend the applicant conduct elutriate testing to determine whether water quality criteria will be met upon discharge of effluent from the DMPA they will be using.

We do not recommend sampling soils at the mitigation site to -20 feet MLT. Rather, we recommend only sampling the depth of soil proposed to be excavated and presumably disposed of somewhere. We also don't see a need to analyze for boron or lime.

- EPA Comment: *In addition to providing sediment contaminant data, we recommend the applicant determine whether water quality criteria would be expected to be met at the discharge from the DMPA, as described in the Upland Testing Manual. Depending on the approach taken, this can range from simple comparison of elutriate sample results to water quality criteria, to simple calculations, or more complex modeling. Note also that since the applicant has proposed several alternative placement areas, this will require the applicant to demonstrate that water quality criteria will be met at the discharge from all of them. This could be simplified by proposing a single DMPA.*

Applicant Response: As previously stated under Comment 3 above, the applicant agrees to maintain Total Suspended Solids (TSS) in return water from the DMPA below the RRC's water quality threshold of 300 mg/l.

**EPA Response:** This comment does not apply to TSS. It applies to the question of whether or not water quality criteria for numerous contaminants, including metals, pesticides, PCBs, PAHs, and other contaminants, are met near the discharge, after allowance for mixing. This is discussed in the Upland Testing Manual. The required analysis is based on the results of elutriate analysis typically, though it can be done using bulk sediment chemistry. We recommend that results of dredged material testing be made available to EPA and other agencies, for review and comment, prior to permit issuance.

- EPA Comment: *Finally, we have significant concerns regarding the proposed mitigation. Specifically, we are concerned that the proposed location for mitigation, near the mouth of Kinney Bayou, does not seem particularly conducive to seagrass growth. While the proposed site would be slightly removed from Kinney Bayou and would have its own separate (but connected) waters, we would expect these waters to be less saline than a typical Texas seagrass bed, and potentially more turbid and with higher nutrient loading. We recommend you either require the applicant to provide evidence that these concerns are not valid, or require them to propose another alternative mitigation proposal, at least for seagrasses.*

Applicant Response: Regarding salinity within Kinney Bayou, it is assumed that the salinity level at the entrance of the Jewell Fulton Canal would be highly saline equaling that of Corpus Christi Bay. Within the portion of Kinney Bayou that is tidally influenced the level of salinity should gradually decrease upstream until fully fresh approaching the wastewater treatment plant. With the uncertainty in transition between freshwater and saltwater, the initial concept of the mitigation wetland was to locate the main tidal channel entrances as close to the Jewell Fulton Canal as possible to capture the highly saline water of Corpus Christi Bay. As the tide falls and when Kinney Bayou is expected to be at its lowest salinity level, the water within the mitigation wetland will drain through the main entrances allowing little to no freshwater inflow into the mitigation wetland. As the tide rises, saltwater from Jewell Fulton Canal will flood into the mitigation wetland areas via the tidal channels. It

is expected that any freshwater between the mitigation wetland entrances and the deep water of Jewell Fulton Canal may enter the mitigation wetland areas reducing the salinity level. However, this is expected to be a minimal amount.

To assess this concept, a water level gauge was deployed at the proposed mitigation wetland entrances for one week (2/5/15-2/11/15) to determine the tidal influence at this location. In addition, salinity level was measured at various times during the one week water level gauge deployment to assess the fluctuation in the salinity level due to the tide. Based on this preliminary data collection effort, it was found that tidal amplitude at the proposed tidal channel wetland entrances is approximately 70% (this value will be assessed in more detail during project design) of that measured at the tide gauge located at the Port Aransas Entrance Channel.

The salinity levels measured ranged from 14 to 35 parts per thousand (PPT) with the average salinity level being in the mid-20s. The target Submerged Aquatic Vegetation (SAV) have been documented to survive well at a salinity level of 20 PPT and potentially fatal at a salinity level of 3.5 PPT. Based on these results, the mitigation wetland appears to have salinity levels feasible to support SAV.

The design shown in the permit drawings is an initial design to show the main components of the wetlands. Details of the design will be refined during final design which will include an in-depth assessment of circulation including the influence of the freshwater affluent within Kinney Bayou. Tidal channel layout and depths as well as flats elevations will be designed to reduce the amount of freshwater entering the mitigation wetland areas.

**EPA Response:** Based on the applicant's response, it may be possible to conclude that salinity is not a concern for seagrass at the proposed mitigation location. The applicant apparently did not address our questions regarding nutrients and turbidity.

Because of uncertainty regarding the proposed mitigation, EPA recommends a special condition be added to the permit that requires a minimum monitoring period of five years post construction. EPA also recommends all statements that the USACE may determine a monitoring plan less than five years to be adequate should be eliminated from the permitted plan and should not be included as a special condition. EPA recommends that after five years of monitoring the USACE, in coordination with other natural resource agencies, should make a determination whether or not the mitigation site is successful, whether adaptive management actions are still warranted onsite to correct deficiencies, or whether additional off-site mitigation is warranted to ensure impacts to wetlands and other special aquatic sites (e.g. seagrasses) are successfully mitigated. EPA recommends that if USACE determines the mitigation site is not fully successful after the fifth year of monitoring, additional mitigation should be required to

compensate for five years of temporal losses of wetland and seagrass functions. A special condition should be added to the permit to reflect this requirement